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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/217,183	12/21/1998	VERNE C. HORNBACK	98-027	8652

24319 7590 09/23/2003

LSI LOGIC CORPORATION  
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EXAMINER

LAUCHMAN, LAYLA G

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/217,183	HORNBECK ET AL.	
	Examiner	Art Unit	
	L. G. Lauchman	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-10 is/are allowed.
- 6) ☐ Claim(s) 1-4, 11, 12, 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

Applicant's arguments, see pages 6-8, filed 7/02/2003, with respect to the 112 rejection have been fully considered and are persuasive. The 112 rejection of Claims 1-12, 27-29 has been withdrawn.

Applicant's arguments regarding the 102(b) rejection have been fully considered but they are not persuasive.

In regards to the Declaration of Verne C. Hornback, filed 7/02/02, Declarant agrees with Lee and does not provide substantial evidence to overcome the inherency argument set forth by the examiner. In paragraph 3 of the declaration, the declarant states that his observations are in disagreement with the Duke Scientific Corporation paper. In paragraphs 4 and 5, the declarant speculates that the reason for the disagreement may lie in the process of manufacturing the borosilicate glass microspheres. Speculations do not offer any evidence that would convince the examiner that the fabrication process used to manufacture the borosilicate glass microspheres has increased the index of refraction of borosilicate glass. Moreover, there is no manufacturing process in the claims of the declarant's invention. Therefore, the Declaration does not give any patentable weight to the claims and is not persuasive.

In regards to the Applicants' response to the 102 rejection, the Applicants' assert that Lee is not silent on the allegedly inherent feature. The examiner respectfully disagrees. The phrase "nearly equal" does not state the exact relationship of the indices of refraction of the borosilicate glass and silicon dioxide. The argument is in

what the real meaning of the wording “nearly equal” entails to the one of ordinary skill in the art. “Nearly equal” does not specify if one quantity is greater, or equal, or less than the other quantity. Thus, the patent to Lee is silent on that feature.

On Applicants’ opinion, the Duke reference is “simply not adequate evidence upon which to base an inherent anticipation rejection, because its information demonstrates a possibility ... in differences in indices of refraction.” However, the Duke reference clearly shows that the index of refraction of borosilicate is greater than the index of refraction of silicon dioxide. The Lee’s patent clearly states that the indices of refraction of those elements are nearly equal. Therefore, in view of all the above remarks, the examiner affirms that Claims 1-4, 11, 12, 27-29 do not have any novelty and the 102 rejection is maintained.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 11, 12, and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al (5,281,305).

As to Claims 1-4, and 12, Lee teaches an optical waveguide that has one layer of dielectric material 10 (silicon dioxide) positioned on a substrate (not shown in Fig. 1) defining a trench 16 (Fig.2) having side walls, the dielectric material having index refraction; a refractive layer 18 of optically transmissive material (borosilicate glass)

adjoining the side walls within the trench and conforming to the side walls, the refractive layer having an index of refraction; and a core 20 (PSG-phosphosilicate glass) of optically transmissive material adjoining the refractive layer within the trench and conforming to the refractive layer (Fig.6), the core having an index of refraction. The refractive layer surrounds the core except on one side; and the dielectric material 23 (Fig.6) contacts the core on the one side where the refractive layer does not surround the core. The refractive layer 18 is U-shaped and surrounds the core except on the one side. Fig. 8 shows that the borosilicate layer (18 and 28) completely encircles the core PSG. A cap 28 of the refractive material 28 (see Fig. 9) extends across the one side of the core 20 between the ends of the U-shaped refractive layer 18. The cap 28 has essentially the same index of refraction as the U-shaped refractive layer 18; and the cap and the U-shaped refractive layer encircling the core 20.

Although the patent does not specifically disclose that the index of refraction of the core is greater than the index of refraction of the refractive layer, and the index of refraction of the refractive layer is greater than the index of refraction of the dielectric material, this feature is seen to be an inherent teaching of that device since the refractive layer of Lee's apparatus, which is made of borosilicate glass, has greater index of refraction than the index of refraction of the dielectric layer made of silicon dioxide (see Duke Scientific Corporation, Technical note -007 B, December 1, 1996). As to the refractive index of the core 20, it has to be greater than the refractive index of the refractive layer, otherwise it would not be able to guide light (See Fiber Optic Reference Guide by David Goff, second Edition, Chapter 3, p 21, Multimode Fiber; Patent N. 5,235,663, N 5,562,838, N. 5,604,835, N. 4,744,623, N 4,146,298). The index of refraction of a core is greater than the index of refraction of the cladding material surrounding the core, therefore in the patent of Lee the index of refraction of the core 20 is greater than the index of refraction of the reflective layer.

As to Claim 11, the refractive layer 18 is deposited within the trench.

As to Claims 27-29, the core 20 is deposited within the refractive layer 18, and the core 20 and the refractive layer 18 are located within the trench.

***Allowable Subject Matter***

Claims 5-10 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The reasons for allowance are stated in the Office action, paper No. 10.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Papers related to this application may be submitted to Technology Center 2800 by facsimile transmission. Papers should be faxed to TC 2877 via the PTO Fax Center located in CP4-4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Center number is (703)872-9306.

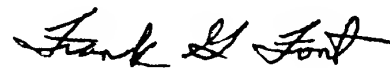
If the Applicant wishes to send a Fax dealing with either a Proposed Amendment or for discussion for a phone interview then the fax should:

- a) Contain either the statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax Cover Sheet; and
  - b) Should be unsigned by the attorney or agent.
- This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to L. G. Lauchman whose telephone number is (703) 305-0071.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC receptionist whose telephone number is (703) 308-0956.

L. G. Lauchman  
Patent Examiner  
Art Unit 2877  
9/11/03/lgl



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Frank G. Font  
Supervisory Patent Examiner  
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